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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,628	08/03/2001	Takahito Nakazawa	04329.2619	6946

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EXAMINER	
ZARNEKE, DAVID A	
ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 07/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,628	NAKAZAWA ET AL.	
	Examiner	Art Unit	
	David A. Zarneke	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *1-12 and 17-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-12 and 17-19, drawn to an apparatus, classified in class 156, subclass 344.

II. Claims 13-16 and 20, drawn to a process, classified in class 438, subclass 106+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the process as claimed can be practiced by another materially different apparatus. For example, the chips can be removed using a belt that comes to a sharp point, wherein at the sharp point, the tape stays on the belt and the chip peels away and is removed from the tape.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

This application contains claims directed to the following patentably distinct species of the claimed invention: an apparatus and a process using an inert gas at a

high temperature to aid in the peeling of the chip and an apparatus and a process without this step.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Richard Burgjian on July 15, 2002 a provisional election was made without traverse to prosecute the invention of Group II, process claims 13-16 and 20. Further, the species in claims 13-16 have been elected within the elected process claims. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-2, 17-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13 and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Matsui et al., US Patent 5,589,029.

Matsui teaches a semiconductor chip-supply method for removing chips (3) diced out of a wafer (1, 21+) from an adhesive tape (2) comprising:

thrusting the chips using pins (10) from the back side of the tape wherein the tape is between the pins and the chips;

absorbing the chips using a sucking member (4) as they are peeled from the tape; and

ascending the sucking member as the pins are thrusting upward thereby removing the chips from the tape and carried off to a subsequent processing step (Figures).

Regarding claim 14, Matsui teaches the use of a recognizing camera (1) to recognize the image of the chip when aligned on the sucking ring (9) (3, 51+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui et al., US Patent 5,589,029, as applied to claim 13 above, and further in view of Satoh, US Patent 6,338,980, or Ohuchi, 6,107,164, or Riding et al., US Patent 6,083,811.

Regarding claim 15, Matsui, relied upon as taught above, fails to teach forming a half cut groove into the active face of the wafer without fully penetrating through the

wafer along a dicing line or a chip separation line, and then grinding the back side of the wafer to form separate chips.

Satoh, Ohuchi and Rising all teach the forming of grooves into the active surface of a wafer and then grinding the back side of the wafer to form separate chips (Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the inventions of Satoh, Ohuchi and Riding in the invention of Matsui because Satoh teaches that this method is cheaper and more productive while preventing the occurrence of fractures in the chips (3, 17+); Ohuchi teaches that warpage is reduced (4, 20+); and Riding teaches that chip outs, cracking and ragged chip edges are reduced (1, 26+).

With respect to claim 16, it would have been obvious to one ordinary skill in the art at the time of the invention to optimize the speed the pins move so as to control damage done to the chip (MPEP 2144.05(b)). One of ordinary skill in the art at the time of the invention would know that, especially with thin chips, it is important to treat the chips carefully so as to prevent damage being done to the chip. With this in mind, the speed that the pins moved at would be an important consideration of one of ordinary skill in the art so as to limit any damage done to the chips when the pins contact and move the chips.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 5,447,266 (Misono); 5,351,872 (Kobayashi); 5,169,196 (Safabakhsh); and 4,859,269 (Nishiguchi) are all cited as teaching inventions very similar to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Zarneke whose telephone number is (703)-305-3926. The examiner can normally be reached on M-Th (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (703)-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-7722 for regular communications and (703)-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

David A. Zarneke
July 17, 2002

AU 2827